

Moon Island Wind

The City of Boston, in collaboration with the City of Quincy, proposes to install a wind turbine on Moon Island as part of a shared commitment to addressing climate change and promoting community based clean energy. The project consists of the design and construction of a single utility-scale wind turbine with a capacity of 1.5 to 2 megawatts, which, over a year, would generate enough clean energy to meet the annual needs of 750-1,000 average homes.

The proposed project site is on a hill in the middle of Moon Island, between the police range and fire training academy. It is an ideal location, because it has strong, consistent winds, is relatively distant from the nearest residence (about one mile), and lies outside of the flight paths to Logan International Airport. The City has completed a comprehensive analysis of the project to ensure that environmental and community impacts are fully understood and minimized.

Question: Why is wind power important to cities?

Answer: There are significant environmental benefits to wind energy. It is renewable. It does not emit the greenhouse gases or other air pollutants (especially particulates and ozone-forming chemicals) that would otherwise be produced by a power plant burning fossil fuels. To replace the expected energy from Moon Island's wind turbine with electricity from conventional New England power sources would require the emission of 1,600 tons of greenhouse gases and 4 tons of other air pollutants. Both Boston and Quincy have demonstrated a commitment to clean energy and were recently designated Green Communities by the Massachusetts Department of Energy Resources.

Question: How many jobs will be created by this project?

Answer: Approximately 48 construction jobs will be created because of this one wind turbine project. Also, the project will require routine maintenance that will be performed on a quarterly basis.

Question: I'm concerned about my view. What will the turbine look like?

Answer: The Moon Island turbine would be approximately 1 mile (5,149 feet) from the nearest residence and approximately 2.3 miles from Wollaston beach. The tower for the wind turbine would be approximately 262 feet high, and the turbine's three blades approximately 135 feet long. When the turbine is mounted on the tower, the rotating blades would reach a maximum height of 398 feet. Computer generated renderings of how the wind turbine would look like have been produced from several vantage points, including from the nearest residence at Bay State Road, as well as from Quincy Shore Drive at Wollaston Beach. You can view the renderings on the City of Boston's Moon Island Wind website: www.cityofboston.gov/environmentalandenergy/moonislandwind.asp.

Question: Would the construction of a wind turbine this size impact the flight path to Logan Airport?

Answer: No, there would not be any impact to flight approaches to or from Logan Airport. The direct flight path and even the so-called “one engine out” emergency procedures for the flight paths to Logan Airport do not go over Moon Island. The construction of a wind turbine of the size proposed would not require any changes to flight approaches, departures nor runway utilization at Logan. A determination of no hazard to air navigation has already been issued by the FAA for this project.

Question: I have heard the wind turbines kill birds. Is this going to be problem?

Answer: Modern turbine designs have dramatically reduced the risk of bird mortality. Years ago, wind turbine blades spun at extremely high speeds, which posed a much greater risk to birds. Today’s equipment, as you see at several sites in Boston, Medford, and Hull, spin much more slowly. Hull Wind 1, located by the town High School, has no documented bird kills after more than 10 years of operation.

The Massachusetts Natural Heritage and Endangered Species Program has formally stated that the proposed wind turbine site is not within Estimated Habitat of Rare Wildlife or Priority Habitat as indicated in the Massachusetts Natural Heritage Atlas (13th Edition).

Question: I am concerned about noise and vibration. Will I hear or feel the turbine in my house?

Answer: Because modern large turbines rotate relatively slowly, they produce less noise than their predecessors. For Moon Island, the impact is further reduced by the one-mile distance between the turbine and the nearest residences. The comprehensive noise assessment that the City of Boston conducted predicts that, even under worst-case conditions, the noise generated by the wind turbine will not noticeably increase the ambient noise level at any residential site and will be in full compliance with the noise standards of both the City of Quincy and the Commonwealth of Massachusetts.

Vibrations that people can feel can be caused by sound that is very low-pitched (below frequencies of 20 Hertz) and very “loud” (over 100 decibels, though we may not actually hear it). Vibrations below these amplitudes are not felt. The highest levels that have been reported in technical papers are under 90 decibels at 5 Hertz as close as 100 yards from a wind turbine. At a mile’s distance, the levels would be much lower and well below the levels perceptible to people.

Question: What about “shadow flicker”?

Answer: Shadow flicker—the shadow cast by rotating turbine blades—is not visible to the human eye when a person is more than 4,600 feet from the turbine. The Moon Island wind turbine would have less than 10 hours of potential flicker annually and the occurrence would only be very early in the morning.

Question: I heard that wind turbines can impact public health. Are there such impacts here?

Answer: An independent panel of public health and wind experts commissioned by the Massachusetts Departments of Environmental Protection and of Public Health recently released its *Wind Turbine Health*

Impact Study (January 2012). The panel examined the scientific literature on public health and wind turbines, including issues related to noise, vibration, and flicker. One of the panel's key findings is that there is no evidence for a set of health effects from exposure to wind turbines that could be characterized as a "Wind Turbine Syndrome." Although the panel did not examine individual projects, its conclusions largely confirm that the approach taken in siting and analyzing Moon Island project is sound. You can obtain the panel's full report at www.mass.gov/dep/public/press/0112wind.htm.

Question: Where will the energy go?

Answer: Electricity generated by the wind turbine will be fed back into the Massachusetts electrical grid to power homes in the region. The value of the energy generated will offset the municipal cost of electricity.

Additional information and the detailed technical reports for the Moon Island Wind project can be found on the city's website at www.cityofboston.gov/environmentalandenergy/moonislandwind.asp.